



SK2522 Applied Experimental Biophysics 8.0 credits

Experimentella biofysikaliska tillämpningar

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for SK2522 valid from Autumn 2007

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Biotechnology, Engineering Physics, Physics

Specific prerequisites

Recommended prerequisites: SK2520 (Experimental Methods in Biomolecular Physics, 8 hp.)

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After the course student will be able to:

- understand important processes of life and how they are studied with biophysical methods
- perform and suggest biophysical experiments to study structural or functional properties of biological molecules
- analyze and draw conclusions from experimental results
- write a short scientific report in English

Course contents

Topics of the course are biological processes and applications of experimental, biophysical methods to biological systems, which are taken from current research areas. Examples are protein folding, membrane transport, respiration and photosynthesis. Also included are applications of advanced biophysical methods which are not part of the course Experimental Methods in Biomolecular Physics (SK2520), for example single molecule fluorescence, ultra-fast spectroscopy and reaction-induced infrared spectroscopy. Laboratory course work provides hands-on experience with some of the most common biophysical methods in spectroscopy and structure determination (X-ray crystallography, fluorescence, infrared spectroscopy, circular dichroism, EPR, NMR).

Lectures (45 h), Lab experience (60 h).

Course literature

Literature will be provided.

Examination

- LAB1 - Laboratory Work, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 5.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Other requirements for final grade

Written examination (TEN1, 5 university credits, marks A/B/C/D/E/Fx/F)
Laboratory (LAB1, 3 university credits, marks P/F)

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.